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SUMMARY OF IDA'S EVALUATION OF THE UNIFORMED SERVICES FAMILY HEALTH PLAN

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January 1996

Prepared for
Office of the Assistant Secretary of Defense (Health Affairs)

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PREFACE

This document was prepared by the Institute for Defense Analyses (IDA) for the Office of the Assistant Secretary of Defense (Health Affairs) under a task entitled "Evaluation of Uniformed Services Treatment Facilities." The overall objective of the task was to evaluate the performance of the Uniformed Services Family Health Plan with respect to cost and effectiveness of care. This document partially fulfills that objective by summarizing the cost comparison and effectiveness methodologies and results.

This work was reviewed within IDA by Karen W. Tyson, Arthur Fries, and Daniel B. Levine and by a consultant, Christopher Jehn. The authors would like to acknowledge the support of Vector Research Incorporated in providing much of the data required by this task.

A. INTRODUCTION

This study was conducted in response to Section 718 of the National Defense Authorization Act for Fiscal Year (FY) 1994.[1] The legislation directed that:

> The Secretary of Defense shall utilize a federally funded research and development center to conduct an independent evaluation of the performance of each Uniformed Services Treatment Facility operating under a managed-care plan.... The evaluation shall include an assessment of the efficiency of the Uniformed Services Treatment Facility in providing health care under the plan. The assessment shall be made in the same manner as provided in section 712(a) of the National Defense Authorization Act for Fiscal Year 1993 for expansion of the CHAMPUS reform initiative.
>
> ...the center conducting the evaluation and assessment shall submit to the Secretary of Defense and to Congress a report on the results of the evaluation and assessment.

The Secretary of Defense charged the Office of the Assistant Secretary of Defense (OASD) for Health Affairs (Health Services Financing [HSF]) with conducting the study. That office, in turn, contracted with The Institute for Defense Analyses (IDA). This report summarizes the results of IDA's evaluation.

To interpret the requirements of the congressional tasking, IDA reviewed Section 712(a) of the National Defense Authorization Act for Fiscal Year 1993,[2] which states:

> The Secretary shall consider the cost-effectiveness of the initiative and the effect of the expansion of the initiative on the access of covered beneficiaries to health care and on the quality of health care received by covered beneficiaries.

It is clear from the above language that our evaluation of the Uniformed Services Treatment Facilities (USTFs) must include a cost-effectiveness analysis and consider the impact of the managed-care plan on the access to and quality of health care.

The USTF managed care plan is better known to beneficiaries and within DoD as the Uniformed Services Family Health Plan (USFHP). An analysis of the cost-effectiveness of the USFHP requires two components—an alternative system of care and a comparison of costs while holding effectiveness constant. The alternatives available to beneficiaries in

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1 *National Defense Authorization Act for Fiscal Year 1994*. Public Law 103-160. 103d Cong., 1st sess., 30 November 1993.

2 *National Defense Authorization Act for Fiscal Year 1993*. Public Law 102-484. 102d Cong., 2d sess., 23 October 1992.

most parts of the country will eventually include TRICARE Prime (a Health Maintenance Organization[3]), TRICARE Extra (a Preferred Provider Organization[4]), and TRICARE Standard (the traditional package of direct care and CHAMPUS [Civilian Health and Medical Program of the Uniformed Services]). Although TRICARE Prime is the system of care that provides benefits most comparable to those of the USFHP, beneficiaries not eligible for Medicare would be free to choose among the three TRICARE alternatives should they decide to no longer participate in the USFHP.

At the time of this analysis, little information was available on the utilization of services or the cost of care under TRICARE Prime or Extra. We therefore decided to compare the known cost of the USFHP with an estimate of the cost to DoD if beneficiaries were covered under TRICARE Standard. This should provide a conservative estimate of the cost to DoD because both TRICARE Prime and Extra are, presumably, less costly than TRICARE Standard. We also estimated the cost to the government of providing Medicare to USFHP enrollees age 65 and older.

The access of USFHP beneficiaries to health care in the event of program termination was addressed by a General Accounting Office (GAO) report,[5] which concludes:

> For beneficiaries, termination should not greatly affect their overall access to care, but they will likely experience increased out-of-pocket costs, and some may experience disruptions in the continuity of their care. Several private and community medical providers are located in and around the areas serving the USTFs, and beneficiaries would retain their eligibility for TRICARE, CHAMPUS, or Medicare-financed care, as well as DoD's direct care system, so termination should not affect access. Additionally, some beneficiaries have private insurance.

In this report, we address access to care from the beneficiaries' standpoint, as determined by beneficiary satisfaction with particular aspects of care reported in past DoD surveys.

Because of a lack of data, our consideration of the impact of the USFHP on the quality of health care received will be limited to health outcomes and overall beneficiary satisfaction with care. However, because the effectiveness analyses (i.e., the analyses of

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3 A Health Maintenance Organization (HMO) is a prepaid system of health care delivery in which beneficiaries must see member providers to receive coverage.

4 A Preferred Provider Organization is a network of providers who have contracted with an insurer to offer beneficiaries medical care at discounted rates.

5 U.S. General Accounting Office. "Defense Health Care: Uniformed Services Treatment Facility Health Care Program." GAO/HEHS-94-174, June 1994, p. 9.

access to and quality of care) are less direct and the data less consistent than those used for the cost comparisons, the conclusions from the effectiveness analyses are somewhat tenuous. In addition, unless the effectiveness of the two plans are equivalent, it is nearly impossible to evaluate costs while holding effectiveness constant. Our analyses therefore compared the USFHP and TRICARE Standard with respect to both cost and effectiveness. Although not definitive, these analyses will nevertheless provide useful information to help DoD policy makers form rational decisions regarding the efficacy of the USFHP.

A comprehensive evaluation of the USFHP could logically consider issues besides the cost to the government and the effectiveness of health care delivery, such as:

- financial viability of the USTFs and potential impact on the civilian populations they also serve,
- beneficiary out-of-pocket expenses, and
- equity issues regarding USFHP benefits and those available under TRICARE and Medicare.

These issues, however, are outside the scope established by the congressional mandate and are not addressed in this report.

B. BACKGROUND

When President Reagan took office in 1981, there were 35 Public Health Service (PHS) hospitals. The Omnibus Budget Reconciliation Act of 1981[6] mandated that each PHS hospital be subject to one of the following actions:

(A) the hospital may be transferred to a financially self-sufficient federal institution,

(B) the hospital may be transferred to local, non-profit private ownership, or

(C) the hospital will be closed by September 30, 1982.

Each PHS hospital was given the opportunity to submit a proposal describing its plan to remain open under either option (A) or option (B). The proposals were evaluated by the Department of Health and Human Services, according to three criteria:

- the hospital must be maintained as a general health-care facility, providing a range of services to the population within its service area,
- the hospital must continue to make services available to existing patient populations, and

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6 *Omnibus Budget Reconciliation Act of 1981*. Public Law 97-35. 97th Cong., 1st sess., 13 August 1981, Subtitle J, Sections 985-988.

- the hospital must have a reasonable expectation of financial viability and self-sufficiency (i.e., the hospital must not rely on directly appropriated funds for its continued operations).

Ten hospitals submitted acceptable proposals under option (B), and were redesignated as Uniformed Services Treatment Facilities (USTFs). The ten USTFs are:

- Martin's Point Health Center, Portland, Maine,
- Brighton Marine Hospital, Boston, Massachusetts,
- Bayley Seton Hospital, Staten Island, New York,
- Johns Hopkins Medical Services, Baltimore, Maryland[7]
- Lutheran Medical Center, Cleveland, Ohio,
- Pacific Medical Center, Seattle, Washington,
- St. John Hospital, Nassau Bay, Texas,
- St. Joseph Hospital, Houston, Texas,
- St. Mary Hospital, Port Arthur, Texas, and
- St. Mary's Hospital, Galveston, Texas.

The last four hospitals on this list are all managed by the Sisters of Charity of the Incarnate Word, a Roman Catholic charity based in Houston, Texas. The geographical locations of the ten USTFs are shown in Figure 1.

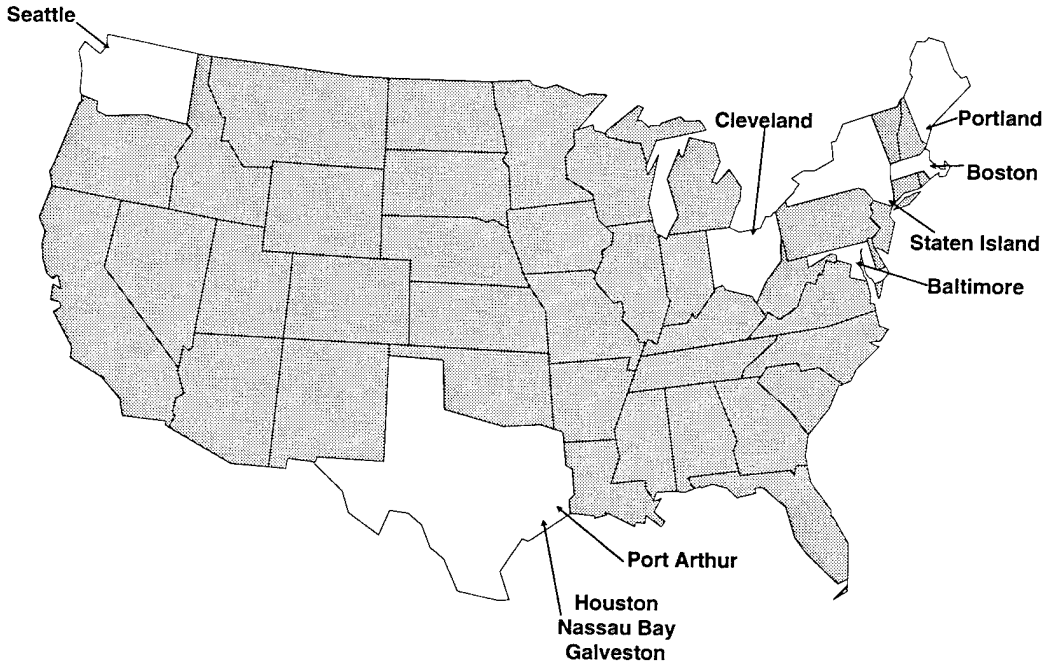

Figure 1. USTF Locations

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7 This hospital has been known variously as Wyman Park Hospital and Homewood Hospital Center.

The USTF administrators expressed concern that, in converting from federal to private ownership, they would lack an initial patient population. To allay this concern, DoD authorized the USTFs to treat members of the uniformed services beneficiary population on a fee-for-service basis.[8] The uniformed services beneficiary population includes active-duty members, retired members, survivors of active-duty and retired members, and qualified family members from the following uniformed services:

- Army, Navy, Air Force, and Marine Corps,
- Coast Guard,
- Commissioned Corps of the Public Health Service,
- National Oceanic and Atmospheric Administration,
- National Ocean Service, and
- lighthouse keepers.

Beneficiaries were not required to enroll to use the USTFs.

The Congress legislated significant changes to the USTF program, which took effect in calendar year (CY) 1987. The most important change was from a fee-for-service payment system to a capitated payment system.[9] Under the latter system, annual payments from DoD to a particular USTF were based on that USTF's count of "unduplicated annual users." An unduplicated annual user was simply any eligible beneficiary who had made at least one visit to the USTF during the course of the calendar year. There were 106,000 unduplicated users in CY 1987.

The capitated payment was linked to the premiums charged by the Federal Employees Health Benefits Program (FEHBP). The FEHBP premium is intended to defray the annual cost of providing for *all* of an individual's health care. However, an individual may have received the bulk of his or her health care at Military Treatment Facilities (MTFs) or through CHAMPUS, and made literally one visit to a USTF. In this situation, DoD was already paying for the individual's health care through MTF operating costs and CHAMPUS benefit payments, yet DoD would make an *additional* capitated payment to the USTF based on only a single visit. In effect, DoD was paying twice for portions of the annual health-care costs of some beneficiaries.

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8 *Military Construction Authorization Act of 1982.* Public Law 97-99. 97th Cong., 1st sess., 23 December 1981, Section 911. This provision is also known as the "Jackson Amendment."

9 In general, a "capitated" payment system is one that prospectively reimburses the health-care provider with a fixed per-capita amount for a period of time (usually one year), regardless of the volume of services actually provided.

The flaws in the plan described above were acknowledged in the National Defense Authorization Act for Fiscal Year 1991.[10] That legislation directed DoD to develop yet another payment system, this time requiring beneficiaries to enroll in the USTF and thereby forfeit eligibility for care at either MTFs or through CHAMPUS. By locking enrollees out of other sources of Military Health Services System (MHSS) care, DoD would avoid the double-payment problem discussed in the previous paragraph.

The current managed care plan took effect on 1 October 1993 (i.e., the beginning of FY 1994). This plan couples capitated payments with enrollment so that capitated payments are made to the USTFs on behalf of only those beneficiaries who have agreed to forfeit their eligibility for care at MTFs and through CHAMPUS. The capitation rates for this plan were developed under the assumption that enrollees would forfeit all other sources of financing their health care, including Medicare and private health insurance.[11] To ensure that the volume of health care provided by the USTF would be commensurate with the annual capitated payment, DoD attempted to attract enrollees who were MHSS-reliant. These are individuals who received all of their pre-enrollment health care through either the USTFs (under the pre-FY 1994 arrangement), the MTFs, or CHAMPUS.

The USFHP benefit package includes the full CHAMPUS package as defined in DoD Regulation 6010.8-R, plus all preventive services recommended by the U.S. Preventive Services Task Force.[12] It does not include a dental benefit. The USFHP benefit package is therefore broader than the CHAMPUS package, and is also broader than those offered at most MTFs located close to the USTFs.[13] For example, the USFHP requires neither an enrollment fee nor a deductible, and copayments for outpatient visits are at most $10. By contrast, CHAMPUS copayments range between 20 and 25 percent, after meeting annual deductibles of up to $300 per family.

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10 *National Defense Authorization Act for Fiscal Year 1991*. Public Law 101-510. 101st Cong., 2d sess., 5 November 1990, Section 718.

11 The estimation procedure is described in Office of the Assistant Secretary of Defense (Health Affairs), "Plan for Managed Care in the USTF Program," October 14, 1992, Appendix A. The estimates were revisited, based on actual experience, in Lewin-VHI, "Review of the USTF Managed Care Plan," April 26, 1994.

12 U.S. Preventive Services Task Force, Department of Health and Human Services. "Guide to Clinical Preventive Services," 1988; updated in Office of Technology Assessment, U.S. Congress, "Benefit Design: Clinical Preventive Services," 1993, chap. 3.

13 A detailed comparison of benefits is provided in "Defense Health Care: Uniformed Services Treatment Facility Health Care Program," cited previously.

In addition to serving USFHP enrollees, the USTFs serve other military beneficiaries as CHAMPUS providers and, to varying extents, serve the surrounding civilian populations as well. All uniformed services beneficiaries are eligible to enroll in the USFHP, with the exception of active-duty members.[14] The exclusion of active-duty members reflects a change from the previous policy. There are no exclusions based on pre-existing conditions. Enrollment applies to an entire family, and active-duty members may enroll their families in the USFHP subject to age and residency restrictions. Non-active-duty sponsors may enroll themselves in addition to all eligible family members. Enrolled beneficiaries are flagged in the Defense Enrollment and Eligibility Reporting System (DEERS), and are thereby "locked-out" of receiving care at MTFs. Conversely, enrolled beneficiaries are automatically disenrolled from the USFHP if they file a CHAMPUS claim for civilian-sector care received during their enrollment period.[15] Upon disenrollment, their eligibility for direct care and CHAMPUS is restored.

Enrollment is also constrained by funding levels. The Congress appropriated a total of $291 million for the USTF program in FY 1994. The DoD's share[16] of that total was $265 million; the remainder went to other government agencies. This appropriation was actually large enough so that all eligible applicants were allowed to enroll. In FY 1995, the appropriations were increased to $300 million for DoD and $329 million in total. After adjustment for inflation, the same appropriation levels will apply in FY 1996.[17]

DoD makes a monthly capitated payment to each USTF, based on the census of enrollees on the first day of the month as recorded in DEERS. The capitation rates vary with the enrollee's sex and across twelve age categories. The rates also vary across the ten USTFs, reflecting geographical differences in the cost of health-care delivery.

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14 Active-duty personnel were declared ineligible because of the special demands of military duty. For example, these personnel are often absent from their home areas for extended periods of time, so the USTF could not reasonably be expected to provide all of their medical care. In addition, sick call procedures, flight physicals, and so on would complicate the coordination of care between the USTF and the MTFs. These arguments are presented in "Plan for Managed Care in the USTF Program," cited previously.

15 There are a few exceptions to this rule. For example, an enrolled family with a teenage college student living away from home may file a CHAMPUS claim on behalf of the student, without triggering a disenrollment.

16 DoD makes capitated payments to the USTFs on behalf of all enrollees, and recovers the funding for non-DoD enrollees via Military Interdepartmental Purchase Requests (MIPRs).

17 *National Defense Authorization Act for Fiscal Year* 1996. U.S. House of Representatives. Conference Report, Report 104-406. 104th Cong., 2d sess., 13 December 1995, Section 721.

C. CHARACTERIZATION OF ENROLLEE POPULATION

The population used for the evaluation of the USFHP consists of all beneficiaries who enrolled during FY 1994 and who generated at least one capitated payment. Our database contained 95,275 such beneficiaries.[18] Some of the characteristics of these enrollees are shown in Table 1. For comparison, the corresponding characteristics of all beneficiaries living in USTF regions[19] and nationwide are also presented.

Table 1. Characteristics of FY 1994 USFHP Enrollees

		USFHP Enrollees		USTF Regions		Nationwide	
Characteristic	Category	Number	Percent	Number	Percent	Number	Percent
Sex and Age	Males < 65	31,617	33%	283,205	36%	2,325,784	36%
	Males ≥ 65	12,798	13%	86,152	11%	593,298	9%
	Females < 65	39,638	42%	345,395	44%	2,975,736	46%
	Females ≥ 65	11,222	12%	74,470	9%	507,894	8%
Beneficiary Group	Active-Duty Family Members	19,501	20%	253,829	32%	2,312,163	36%
	Retirees and Family Members	75,774	80%	535,393	68%	4,090,549	64%
Service	Army	31,290	33%	312,846	40%	2,180,943	34%
	Navy	26,641	28%	207,644	26%	1,372,627	21%
	Air Force	25,211	26%	196,105	25%	2,036,824	32%
	Marine Corps	4,766	5%	38,529	5%	413,000	6%
	Non-DoD	7,367	8%	34,098	4%	399,318	6%

With respect to Service, age, and sex, the distribution of USFHP enrollees is roughly representative of the general population of beneficiaries, both regionally and nationwide. However, USFHP enrollees are much more heavily populated with retirees and their family members.

To better understand what type of beneficiary enrolls in the USFHP, we matched enrollees with a recent survey (October 1994) performed by the OASD for Health Affairs (Health Budgets and Plans [HB&P]). The matching process identified specific

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[18] According to OASD(HA/HSF), the official number of FY 1994 enrollees is 98,532. Our number is slightly lower because of some data loss resulting from migration to a new computer system. The missing data have since been recovered, but not in time for the current analysis. Because the missing data appear to have been lost at random, their omission should not cause any bias problems.

[19] USTF regions should not be confused with catchment areas, which are 40-mile radius regions around each hospital. The boundary of each USTF region was constructed to capture at least 90 percent of the enrollee population, where possible (the only exception is Martin's Point, where only 85 percent of the population was captured). The resulting boundaries are either 50 or 70 miles in radius, depending on location.

individuals who were both USFHP enrollees and participants in the HB&P survey. Among other things, the survey asked questions concerning overall satisfaction with care, private insurance coverage, and health status. Only 641 matches were found, due primarily to the fact that beneficiaries living in USTF catchment areas (a 40-mile radius region around each hospital) were not explicitly sampled. Although the sample of 641 matches is not enough to draw conclusions about enrollees at any particular USTF, it is large enough to draw some overall conclusions.

Table 2 summarizes the responses of enrollees to some of the survey questions and compares them with the responses of all beneficiaries living in USTF regions and nationwide.

Table 2. Beneficiary Responses to HB&P Survey

Item	Response	USFHP Enrollees	USTF Regions	Nationwide
Overall Satisfaction	MTFs	73%	83%	80%
	CHAMPUS	78%	87%	86%
Private Insurance†	Covered	37%	35%	31%
Health Status	Excellent	24%	25%	24%
	Very Good	34%	33%	33%
	Good	30%	30%	30%
	Fair	9%	11%	10%
	Poor	3%	2%	3%

† The private insurance percentages shown above were derived for beneficiaries under age 65. Most beneficiaries over age 65 are covered by Medicare.

The most striking figure in Table 2 is the large percentage of enrollees with private health insurance coverage. This is relevant because the capitation rates for the USFHP were derived under the assumption that the enrollee population would be MHSS-reliant (i.e., without private health insurance and dependent on the MHSS for care). If a large percentage of enrollees are receiving their care outside the MHSS, the capitation rates may have been set too high.

Also of note is the lower overall satisfaction with the MHSS of USFHP enrollees relative to other beneficiaries living in the same regions. A possible interpretation of this result is that beneficiaries who do not care for MHSS services are more likely to enroll in the USFHP because they do not mind giving up these services. This interpretation must be made with care, however, because the satisfaction questions apply only to those who had used the corresponding facilities within the past six months. If beneficiaries have not

recently used MHSS services, we cannot determine whether it is because they do not like them or because they did not need to use them.

D. APPROACH TO COST COMPARISON ANALYSIS

The primary focus of our evaluation of the USFHP is to compare the observed cost of the USFHP in FY 1994 with an estimate of what the cost would have been had beneficiaries been covered under TRICARE Standard or Medicare during the same year. The current section considers the costs under TRICARE Standard only; the Medicare analysis is described in a later section.

Unlike the USFHP, which is a capitated payment system, the costs under TRICARE Standard are determined by the extent to which beneficiaries actually use MHSS services. Because the fee schedule facing beneficiaries at the USTFs differs from that at TRICARE facilities, the utilization behavior of beneficiaries will likely differ as well. The different utilization behavior between the two plans means that we cannot simply apply MHSS cost factors to USTF utilization rates to obtain the cost of delivering care under TRICARE Standard. Instead, the cost projections must be based on direct observations of the utilization of MTF and CHAMPUS services.

There are two aspects to the estimation of costs under TRICARE Standard: the estimation of utilization and the estimation of unit cost factors. The utilization and costs of six types of MHSS services—MTF and CHAMPUS inpatient, outpatient, and prescription services[20]—need to be estimated. Once utilization and unit costs have been estimated, they are multiplied and added across individuals to obtain an estimate of total cost.

The key to our approach was to make the cost comparisons specifically for the population of USFHP enrollees. Because USFHP enrollees are not a random sample from the DoD beneficiary population, but are rather a self-selected sample, their utilization behavior is not necessarily typical of the beneficiary population in general. Consequently, employing utilization estimates obtained directly from DoD-wide data could seriously bias the results. It is therefore important that the utilization estimates be obtained specifically for beneficiaries enrolled in the USFHP.

Because all forecasts of future behavior are necessarily based on past history, it was crucial to select a representative time frame for analysis. Any utilization experience before FY 1994 was deemed to be unrepresentative because beneficiaries, including

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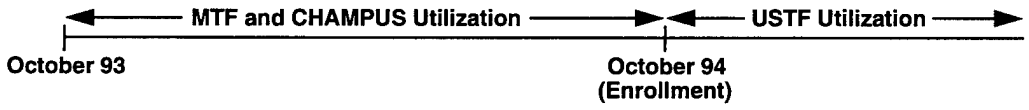
[20] The USFHP does not include a dental benefit.

active-duty members, were able to use the nearly free care provided by USTFs without being locked out of other MHSS services. Presumably, this would tend to reduce CHAMPUS utilization because CHAMPUS requires substantial deductibles and copayments. Also, the availability of nearly free care at facilities located in the midst of the civilian community might reduce MTF utilization as well.

For the above reasons, we determined that pre-enrollment MHSS utilization by USFHP enrollees must be observed from FY 1994 onward. This restricted the group of enrollees for whom useful utilization information was available to those who enrolled after 1 October 1993. We refer to this group of enrollees as "non-initial enrollees." The group includes beneficiaries who enrolled in FY 1995, although they were not included in the cost comparisons because complete FY 1995 cost and utilization data were unavailable when this analysis was performed. A total of 36,157 non-initial enrollees were available for analysis.

The importance of non-initial enrollees in the estimation of MHSS utilization behavior before enrollment is illustrated below. Although an October 1994 enrollment date is used in the illustration, the discussion that follows applies to any enrollment date after 1 October 1993.



For a beneficiary who enrolled on 1 October 1994, no utilization of direct care or CHAMPUS is possible after that date because the beneficiary is locked out of these services. However, from 1 October 1993 until 30 September 1994, we may observe this individual's utilization of direct care and CHAMPUS, free of the complicating effects of the simultaneous availability of USTF services. For beneficiaries who enrolled between 1 October 1993 and 30 September 1994, we can observe utilization only from the beginning of the fiscal year until the date of enrollment. The analysis therefore had to take into account the time period over which utilization was observed.

Because individuals were observed over varying time periods, we also considered the potential for seasonal variation of utilization. For example, winter utilization tends to be higher than during the rest of the year. Consequently, we would probably overestimate annual utilization if we scaled utilization during the winter months by a factor of four. By analyzing monthly DoD-wide utilization over the past few years, we were able to derive factors that enabled us to appropriately scale the time periods of observation into annual

equivalents. It was necessary to perform this adjustment for the one-third of non-initial enrollees with less than a full year of observed utilization.

Before formally analyzing the utilization of MHSS services, we examined the possibility that, in the months immediately preceding enrollment, pre-enrollees might curtail their utilization, particularly of CHAMPUS services, in anticipation of nearly free care at USTFs. If this "anticipation effect" exists, then our estimates of expected annual utilization would be biased downward unless a statistical correction were employed. To examine whether this anticipation effect exists, we charted the monthly utilization of CHAMPUS outpatient services by non-initial enrollees, after adjusting for seasonal effects. Because there is a three-month "open season" for USFHP enrollment (from July until September, with plan participation beginning in October), we compared utilization during the three-month period before enrollment with utilization during the rest of the year. The utilization patterns suggested that no anticipation effect exists and, consequently, we did not account for it in our analyses.

E. ESTIMATING EXPECTED UTILIZATION UNDER TRICARE STANDARD

To estimate what USFHP enrollee utilization would have been under TRICARE Standard, we first matched non-initial enrollees directly with Biometrics inpatient records (records of hospital stays at MTFs) and CHAMPUS inpatient, outpatient, and prescription claims data. The preceding databases all record utilization on an individual basis. Although we could directly compute average utilization rates by age, sex, and USTF for non-initial enrollees and apply these rates to the population of FY 1994 enrollees, this approach assumes that these enrollee populations are alike with respect to all other characteristics that influence utilization behavior. Because we did not want to make that assumption, we decided to model the utilization rates of non-initial enrollees as a function of individual, regional, and facility characteristics.

Unlike Biometrics inpatient records and CHAMPUS claims data, MTF outpatient and prescription utilization data are available only in aggregate form, at the work-station level. The only sources of individual-level data on utilization of MTF outpatient and prescription services are DoD surveys. The most current survey at the time of this analysis was the previously mentioned HB&P survey, which was fielded from October through November 1994 and had almost 200,000 respondents. Although the survey asked the requisite questions pertaining to utilization of MTF outpatient and prescription services, its primary disadvantage is that it is a DoD-wide survey, not targeted specifically to USFHP enrollees. We attempted to overcome this flaw by modelling MTF outpatient

and prescription utilization as a function of individual, regional, and facility characteristics. By holding constant the effects of many different variables correlated with utilization, any potential biases arising from the use of DoD-wide data should be mitigated to the extent the differences in the enrollee and general populations are determined by these variables. A summary of the populations and data sources used to model the utilization of each type of MHSS service is presented in Table 3.

Table 3. Populations and Data Sources Used in Utilization Modelling

MHSS Service	Population Modelled	Data Source
MTFs		
Inpatient	Non-initial enrollees	Biometrics inpatient records
Outpatient	HB&P survey respondents	HB&P survey
Prescriptions	HB&P survey respondents	HB&P survey
CHAMPUS		
Inpatient	Non-initial enrollees	CHAMPUS inpatient claims
Outpatient	Non-initial enrollees	CHAMPUS outpatient claims
Prescriptions	Non-initial enrollees	CHAMPUS prescription claims

Many different variables were used in the modelling process. Natural demographic variables such as age group and sex were used as well as beneficiary category (retiree or family member, survivor or family member, active-duty family member), sponsor's Service, family relationship (sponsor, spouse, child, other family member), and eligibility for Medicare and alternate care (such as the CHAMPUS Reform Initiative). Information on the regional beneficiary composition was collected, and distances to the nearest military and civilian hospitals were computed. Facility information was also collected, such as physician full-time equivalents at military hospitals and clinics, and operating beds and emergency rooms at civilian hospitals. Finally, CHAMPUS provider densities (number of physicians per capita) by Metropolitan Statistical Area were computed.

The outcome of the modelling process was an estimate of the relationships among the above variables and each type of utilization. The better the models actually fit the observed utilization patterns, the more confidence we have in their ability to predict future utilization. Separate models were developed for the six types of utilization under consideration. The same types of models were used, whether applied to enrollee utilization data or survey responses. Once the models were estimated and were determined to fit the data well, the characteristics of the FY 1994 enrollee population were substituted into each model to obtain the utilization predictions. The predictions

were obtained for the time periods over which enrollees generated capitated payments (i.e., from the date of enrollment until either the end of the fiscal year or disenrollment).

Table 4 shows the predicted utilization of MTF and CHAMPUS services on an annualized basis.

Table 4. Predicted USFHP Enrollee Utilization of MTF and CHAMPUS Services

	Outpatient Visits per Person		Inpatient Discharges per 100 Persons		Prescriptions per Person	
USTF	MTF	CHAMPUS	MTF	CHAMPUS	MTF	CHAMPUS
Johns Hopkins	3.0	1.4	5.1	2.0	5.6	0.3
Brighton Marine	2.2	1.4	1.3	2.5	5.4	0.3
St. John	1.6	1.4	3.2	3.9	3.2	0.7
Bayley Seton	2.9	1.2	2.4	3.3	5.8	0.4
Pacific Medical	3.0	1.3	2.3	1.6	6.7	0.5
St. Mary's (Galveston)	1.7	0.9	2.3	2.4	3.3	0.8
St. Joseph	1.5	1.2	3.5	4.6	2.5	0.6
St. Mary (Port Arthur)	1.8	1.3	3.1	2.5	4.1	0.7
Martin's Point	2.3	1.9	2.6	4.3	4.4	0.7
Lutheran Medical	2.2	1.6	2.3	3.5	4.2	0.9
Overall	2.4	1.4	3.0	3.0	4.9	0.5
Age < 65	2.4	1.8	3.3	3.9	4.1	0.6
Active-Duty Family Members	3.5	1.9	5.9	7.0	3.9	0.5
Retirees and Family Members	2.0	1.7	2.3	2.7	4.2	0.7
Age ≥ 65	2.3	0.4	2.0	0.5	7.2	0.2

Overall, USFHP enrollees are predicted to have 3.8 outpatient visits, 0.06 hospitalizations and 5.4 prescriptions per person in TRICARE facilities (MTFs and CHAMPUS). From the HB&P survey, we estimate an additional 1.9 outpatient visits, 0.05 hospitalizations, and 2.6 prescriptions would be paid by private sources or Medicare.[21]

For purposes of comparison, we also computed the rates of USFHP enrollee utilization of USTF services during FY 1995.[22] It must be noted, however, that the USTF utilization data are incomplete (there were no data for almost 20 percent of enrollees and some facilities did not send data in the required format) and exhibit much more variation than do the corresponding CHAMPUS and Biometrics data. Any estimates of utilization

[21] Some double-counting is likely because individuals can file both private-insurance and CHAMPUS claims for the same episode of care.

[22] FY 1994 USTF utilization data are both incomplete and unreliable.

rates derived from these data must therefore be considered as very rough. Using only those facilities reporting positive utilization, the estimated utilization rates are 7.6 outpatient visits and 0.06 hospitalizations per person (prescription utilization data are too sparse to report with any accuracy). The apparent increase in outpatient utilization is likely due to decreased beneficiary cost sharing, whereas the inpatient utilization rate is not higher because the USTFs are probably applying utilization management controls typically used by HMOs.

As exhibited in Table 4, there is a great deal of regional variation in the predicted utilization of MHSS services, due partly to the varying degrees of proximity to MTFs. The availability of military hospitals and clinics (provided there is at least one) within 80 miles of each USTF is shown in Figure 2. An 80-mile radius was chosen to account for the availability of MTFs to enrollees living on the outskirts of a 40-mile USTF catchment area. Only clinics that provided at least 10 percent of their outpatient services to non-active-duty beneficiaries in FY 1994 are counted.

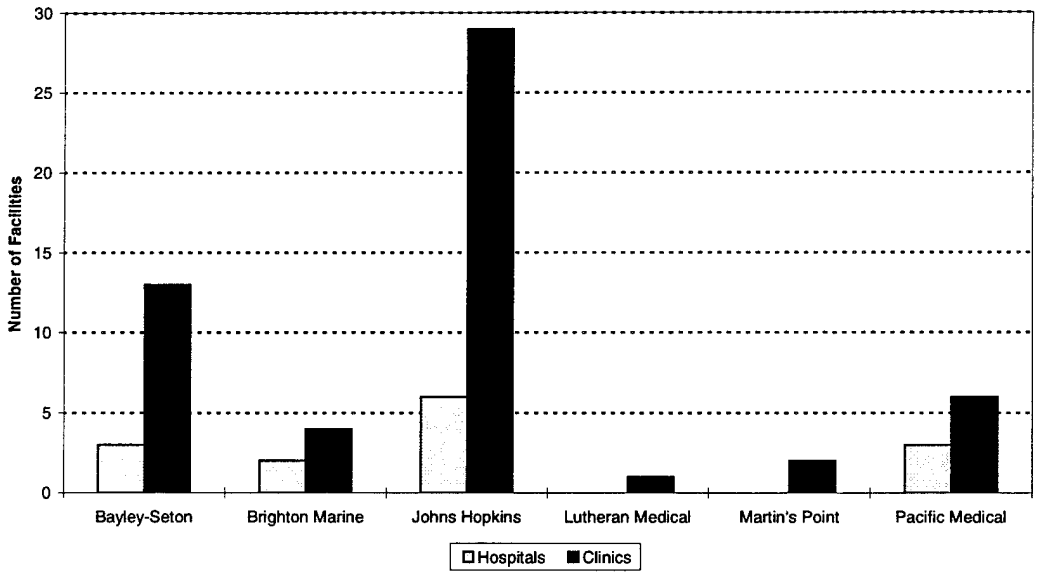


Figure 2. Number of Military Hospitals and Clinics Within 80 Miles of USTFs

The patterns of predicted MTF utilization displayed in Table 4 correspond roughly to the availability of MTFs shown in Figure 2. Note that whereas no military hospitals or clinics are in the general vicinity of the Sisters of Charity hospitals (St. John, St. Joseph, St. Mary, and St. Mary's—all near Houston, Texas), the utilization of direct care by enrollees at the latter facilities is non-negligible. An examination of enrollee addresses revealed that many enrollees live well outside USTF catchment areas, and their access to MTFs may not be accurately reflected by Figure 2. This is particularly evident for

enrollees at Bayley Seton, Martin's Point, and Lutheran Medical hospitals, where 36 percent, 43 percent, and 21 percent, respectively, live outside their catchment areas. Moreover, it is apparent that many enrollees travel outside the USTF areas to receive inpatient care. This is supported by Figure 3, which shows the military hospitals used by non-initial enrollees who were hospitalized during FY 1994.

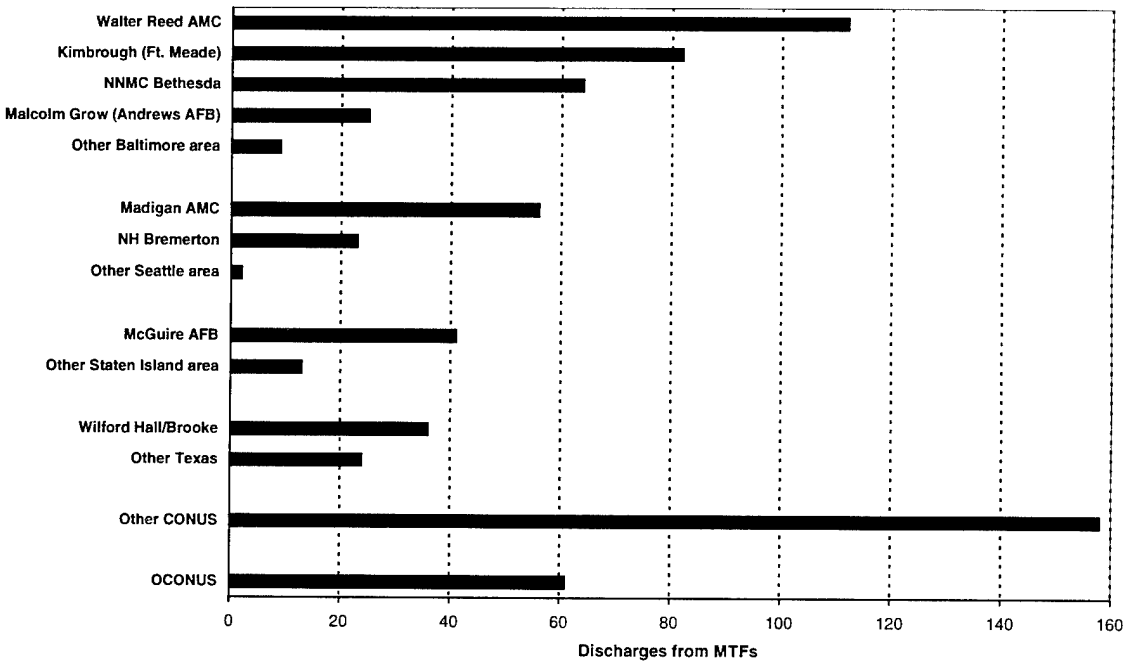


Figure 3. Military Hospitals Used by Enrollees for Inpatient Care

Of particular note are the relatively large numbers of discharges from hospitals outside the vicinity of USTFs (labelled "Other CONUS" [continental United States]) and even outside the continental United States (labelled "OCONUS"). Additionally, a substantial number of discharges were from Wilford Hall USAF Medical Center and Brooke Army Medical Center (located in San Antonio, Texas), which are over 200 miles from the four Sisters of Charity hospitals.

Overall, predicted enrollee utilization of MTF services is greater than that of CHAMPUS. Predicted CHAMPUS utilization is skewed low because so many enrollees (25 percent) are over age 65 and (in most cases) ineligible for CHAMPUS. The most frequent users of MHSS services are active-duty family members. In particular, their predicted utilization of inpatient services is much greater than that of retirees and their family members under age 65. That outcome is likely attributable to the fact that over half of the hospitalizations for active-duty

family members are for childbirth.[23] In addition, retirees and their family members are more likely to have private insurance coverage and, as a result, to use MHSS services less often.

F. ESTIMATING UNIT COST FACTORS

Unit cost factors were developed to estimate the cost associated with predicted utilization. Separate cost factors were developed for inpatient care, outpatient care, and prescriptions provided both by MTFs and under CHAMPUS—a total of six cost factors. In addition, the six factors were further calibrated, where possible, by age, sex, and USTF, to reflect demographic and regional differences in unit cost.

1. MTF Cost Factors

a. Inpatient Care

We matched the roster of non-initial enrollees against the FY 1994 Biometrics file, which contains data on inpatient care provided by MTFs. The MTFs do not bill patients for care received; thus the Biometrics records do not contain direct estimates of the cost associated with each MTF discharge. However, the Biometrics records do contain clinical information on diagnosis and treatment, from which a discharge is classified into exactly one Diagnosis Related Group (DRG). Moreover, the combination of DRG and length-of-stay permits computation of a measure of case-mix complexity known as a Relative Weighted Product (RWP).

We multiplied the RWP on each discharge record by an estimate of the cost per RWP. The latter was obtained by updating for inflation some estimates produced in an earlier IDA study.[24] Finally, because there were too few MTF discharges from which to directly compute average costs for every age/sex/USTF combination with any degree of statistical precision, we used linear regression analysis to estimate average costs while controlling for these three factors. Each age/sex combination and USTF were represented in the regression by indicator variables (variables that take on the values 0 or 1).[25] We then substituted the values of the indicator variables into the estimated regression equation to produce estimates of the average cost for each age/sex/USTF combination.

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23 Lurie, Philip M., et al. "Analysis of the 1992 DoD Survey of Military Medical Care Beneficiaries." Institute for Defense Analyses, Paper P-2937, January 1994.

24 Goldberg, Matthew S., et al. "Cost Analysis of the Military Medical Care System: Final Report." Institute for Defense Analyses, Paper P-2990, September 1994.

25 Using indicator variables for every possible combination of age, sex, and USTF is identical to computing averages directly. Treating the USTF indicators separately from the age/sex indicators assumes that the USTF regional effects on cost are the same for each age group and sex.

b. Outpatient Care

MTFs do not maintain patient-level records on outpatient care. Instead, they maintain only records of numbers of visits within broad clinical areas and beneficiary categories. Given this lack of detailed data, we estimated a single cost factor for MTF visits, without any distinctions by age group, sex, region, or case-mix complexity.

The earlier IDA study estimated an average cost per visit of $75 (FY 1992 dollars). We first updated this value to $81 (FY 1994 dollars) to reflect inflation. Next, we recognized that the definition of a "visit" differs between survey responses (the basis of the utilization estimates) and internal MTF accounting. A conversion factor between survey-based visits and MTF visits was developed in the course of the earlier IDA study. That study concluded that a single survey-based visit is counted, on average, as 1.6 visits by the MTF accounting system. Therefore, to obtain the average cost of a survey-based visit, we multiplied the MTF-based estimate of $81 by the factor 1.6, arriving at a revised estimate of $130 per visit.

c. Prescriptions

We first attempted to estimate the average cost of MTF prescriptions using data from the Medical Expense and Performance Reporting System (MEPRS). Specifically, we computed the ratio of total expense to total workload in the pharmacy workcenters of all CONUS MTFs. This method yielded an estimate of $12 per prescription. However, we considered this cost to be implausibly low for the following reason. Annual per capita expenditures for pharmaceuticals in 1993 were $280, including both out-of-pocket and third-party payments.[26] Adjusting for an inflation rate of 3.3 percent in prescription drugs,[27] the estimated expenditures for pharmaceuticals in 1994 were $289 per person. Dividing this cost by an estimated 8 prescriptions per person per year (the sum of the estimated numbers of prescriptions obtained through MTFs, CHAMPUS, and private sources), we arrive at an estimate of $36 per prescription. Of course, the populations for which the estimated annual expenditures and number of prescriptions were obtained are probably not conformable, but using them together should at least give a rough estimate of the average cost per prescription.

As another alternative to the MEPRS accounting estimate, we considered the average allowed cost for CHAMPUS prescriptions among non-initial enrollees. This

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26 U.S. Department of Commerce, Bureau of the Census. *Statistical Abstract of the United States*, Table 154. Washington, D.C.: U.S. Government Printing Office, 1995.

27 U.S. Department of Commerce, Bureau of the Census. *Statistical Abstract of the United States*, Table 762. Washington, D.C.: U.S. Government Printing Office, 1995.

method yielded an estimate of $35 per prescription, very close to the estimate of $36 obtained from national statistics. We therefore decided to use the average CHAMPUS allowed cost of $35 as an estimate of the average cost per MTF prescription.

2. CHAMPUS Cost Factors

a. Inpatient Care

We matched the roster of non-initial enrollees against the FY 1994 CHAMPUS inpatient claims file. Unlike the case for MTFs, the CHAMPUS claims file contains direct information on billed amount, allowed amount, and government claims payment for each discharge. For estimating costs under TRICARE Standard, the government claims payment is the most relevant quantity.

As was the case for MTF discharges, there were too few CHAMPUS inpatient claims from which to accurately compute average costs for every age/sex/USTF combination. Once again, we used linear regression analysis to estimate average costs while controlling for these three factors. Finally, we burdened the predicted costs with an overhead rate of 5 percent (based on CHAMPUS budget data[28]), to reflect the costs of fiscal intermediaries and the CHAMPUS central office (OCHAMPUS).

b. Outpatient Care

We matched the roster of non-initial enrollees against the FY 1994 CHAMPUS outpatient claims file. We again view the government claims payment as the most relevant quantity for estimating costs under TRICARE Standard. In this instance, there were enough visits that we could simply average the costs within each age/sex/region cell, without recourse to regression analysis. Again, we applied a 5 percent overhead rate to reflect the costs of fiscal intermediaries and OCHAMPUS. The overall average, burdened government cost was $86 per visit.

c. Prescriptions

We matched the roster of non-initial enrollees against the FY 1994 CHAMPUS prescription file. Then we computed the average cost within each age/sex/region cell, and again applied a 5 percent overhead rate. The overall average, burdened government cost, was $22 per prescription.

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[28] Office of the Civilian Health and Medical Program of the Uniformed Services. "CHAMPUS Chartbook of Statistics." OCHAMPUS Guide 5400.2-CB, December 1994, p. III-9.

G. ESTIMATING TOTAL DOD COSTS

We first compared the costs of the USFHP with TRICARE Standard (excluding Medicare, which is a non-DoD cost). To ensure comparability between the costs of the USFHP and TRICARE Standard, the utilization projections were produced for the same time periods over which enrollees generated capitated payments, not on an annualized basis. With these projections in hand, along with the associated unit cost factors, the estimation of total costs is straightforward. For each individual FY 1994 USFHP enrollee, the projected utilization of each MHSS service is multiplied by the corresponding cost factor to obtain the total cost for that service. These costs are then summed across services to obtain the total MHSS cost for each individual. Finally, the costs for each individual are summed to compute the overall cost. Table 5 shows the breakdown of USFHP expenditures and projected TRICARE Standard (MTF and CHAMPUS) costs by USTF and beneficiary category.

Table 5. Cost Comparisons Between the USFHP and TRICARE Standard (Dollars in Millions)

USTF	USFHP	MTF and CHAMPUS	Difference	Ratio
Johns Hopkins	$43.6	$13.7	$29.9	3.2
Brighton Marine	33.8	7.3	26.6	4.6
St. John	26.6	6.9	19.8	3.9
Bayley Seton	26.8	7.1	19.7	3.8
Pacific Medical	48.8	12.8	36.0	3.8
St. Mary's (Galveston)	6.7	1.3	5.4	5.2
St. Joseph	27.0	8.3	18.6	3.2
St. Mary (Port Arthur)	10.4	2.5	7.9	4.2
Martin's Point	34.9	12.0	22.9	2.9
Lutheran Medical	9.6	3.1	6.5	3.1
Total	$268.2 †	$74.9	$193.3	3.6
Age < 65	136.4	58.6	77.8	2.3
Active-Duty Family Members	26.3	19.7	6.6	1.3
Retirees and Family Members	110.1	38.9	71.2	2.8
Age ≥ 65	131.8	16.3	115.5	8.1 ‡

† The official capitated total was $274 million. The number displayed is less because our analysis database contained 3 percent fewer enrollees than the official enrollee database.

‡ This is very close to the number obtained by the Congressional Budget Office, which estimated a ratio of 8:1 for Medicare-eligible beneficiaries. See Congressional Budget Office, "Evaluating the Uniformed Services Treatment Facilities," June 1994, for more details.

It is important to note that the ratios (USFHP costs divided by estimated TRICARE Standard costs) displayed in Table 5 apply to DoD program costs, not to individual

procedure costs. Thus, for example, the ratio of 8.1 for beneficiaries over age 65 signifies that DoD is paying eight times more (on an annual basis) to provide care to these beneficiaries under the USFHP than it would have under TRICARE Standard. The ratio is so large because these beneficiaries would ordinarily be covered under Medicare rather than CHAMPUS, not because it costs eight times more to perform a given procedure at a USTF.

For every USTF, as well as overall, we estimate that DoD is paying considerably more for the USFHP than it would have under TRICARE Standard. Other than the possibility that the capitation rates were set incorrectly, there are only two possible interrelated reasons for this: (1) the USFHP is covering essentially *all* of the beneficiaries' medical costs whereas, under TRICARE Standard, some of these costs would be paid through beneficiary deductibles and copayments, Medicare, and private insurance; or (2) beneficiaries use the USTFs more than they would MTFs and CHAMPUS. With regard to the first reason, DoD is paying for the care of Medicare-eligibles, who would otherwise be ineligible to use CHAMPUS. Although constituting only 25 percent of the enrollee population, these beneficiaries account for almost half of total USFHP expenditures. Also, enrollees are receiving a higher level of benefits under the USFHP (i.e., they are receiving nearly free care rather than being subject to the usual CHAMPUS deductibles and copayments). The out-of-pocket costs normally incurred by CHAMPUS beneficiaries are now being incurred by DoD. In addition, as suggested by the HB&P survey, perhaps one-third of USFHP enrollees have private insurance coverage. It is therefore likely that the USTFs are not providing for all their care, but DoD is paying as if they were.

A rough estimate of the impact of private health insurance coverage on DoD expenditures can be obtained by breaking out enrollees under age 65 by beneficiary status—active-duty family members versus retirees and their family members. Because it is well-established that many retiree families have private health insurance coverage whereas most active-duty family members do not,[29] the cost difference between the USFHP and TRICARE Standard for the latter group of enrollees should be relatively free of the effects of private health insurance coverage. As seen in Table 5, costs for this group are still 30 percent higher under the USFHP than under TRICARE Standard.

With regard to the second reason—differences in utilization of USTF and TRICARE facilities—we have previously shown that USTF outpatient utilization is roughly double that of

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[29] According to the HB&P survey, 46 percent of retirees and family members under age 65 and 8 percent of active-duty family members have private health insurance. Similar results have been found in other DoD surveys.

TRICARE and inpatient utilization is approximately the same. The presumed reason for the increase in outpatient utilization is reduced beneficiary cost sharing. To sort out the effects of reduced beneficiary cost sharing on TRICARE Standard expenditures, we would have to determine the extent of additional utilization and how it would be distributed between MTFs and CHAMPUS. However, this is a difficult undertaking and is outside the scope of this effort.

H. ESTIMATING TOTAL GOVERNMENT COSTS

Because the Health Care Financing Administration does not provide information on individual Medicare claims to DoD, it was not possible to directly estimate what the Medicare costs would have been for USFHP enrollees had they not participated in the USFHP. However, we were able to obtain a rough estimate of Medicare costs from published data on Medicare enrollees and reimbursements nationwide.[30] The data show an average per capita Medicare expense of $3,756, after inflating FY 1992 dollars to FY 1994 dollars. Offsetting this number by the annual Medicare Part B premium of $469 (a weighted average of the actual premium and the value "0" for non-subscribers), we obtained an estimate of $3,287 per person. By prorating this cost over the enrollment period for each eligible enrollee over age 65, we were able to estimate the Medicare costs for FY 1994 USFHP enrollees. A comparison of the USFHP cost with the total government cost (DoD and Medicare) is shown in Table 6.

Table 6. Cost Comparisons Between the USFHP and TRICARE Standard Plus Medicare (Dollars in Millions)

USTF	USFHP	DoD and Medicare	Difference	Ratio
Johns Hopkins	$43.6	$23.7	$19.9	1.8
Brighton Marine	33.8	16.4	17.4	2.1
St. John	26.6	14.2	12.4	1.9
Bayley Seton	26.8	14.0	12.8	1.9
Pacific Medical	48.8	29.4	19.4	1.7
St. Mary's (Galveston)	6.7	3.0	3.7	2.2
St. Joseph	27.0	14.8	12.2	1.8
St. Mary (Port Arthur)	10.4	5.4	5.0	1.9
Martin's Point	34.9	19.0	15.9	1.8
Lutheran Medical	9.6	4.7	4.9	2.0
Total	$268.2	$144.6	$123.6	1.9
Age < 65	136.4	58.6	77.8	2.3
Age ≥ 65	131.8	86.0	45.8	1.5

30 U.S. Department of Commerce, Bureau of the Census. *Statistical Abstract of the United States*, Tables 159 and 160. Washington, D.C.: U.S. Government Printing Office, 1995.

Although the total government cost is certainly higher with the inclusion of Medicare costs, the USFHP remains more expensive for every USTF. Of particular interest is the final row of Table 6. The addition of the Medicare cost ($70 million) to the DoD cost ($16 million) results in a total that is still $46 million below the cost of the USFHP for beneficiaries age 65 and older. The cost difference for younger beneficiaries remains as before, and the total cost difference is now estimated at $124 million. The reasons for the cost difference remain the same as well, i.e., a substantial number of enrollees have private insurance coverage and the USFHP benefit is more generous than the alternative, increasing costs both directly (costs for a fixed number of services are transferred from the beneficiary to the government) and indirectly (utilization increases).

I. HEALTH OUTCOMES

Cost, although very important, is but one concern in the evaluation of the USFHP. Perhaps an equally important consideration is the impact on health outcomes of terminating the USFHP and reverting to utilization under TRICARE Standard or Medicare. The issue is whether shifting from a nearly cost-free environment to a cost-sharing environment is likely to have a detrimental effect on beneficiaries' health. Presumably, higher out-of-pocket costs result in lower utilization of medical services. If that is so, then lower utilization could conceivably result, in turn, in poorer health.

We are unaware of any direct evidence that deals specifically with the health of USFHP enrollees and how it would be affected by returning to a cost-sharing environment. The major study that appears to address this concern, albeit for the general beneficiary population, is the RAND Health Insurance Experiment,[31] which ran from late 1974 until 1982. The experiment distributed 7,684 participants under age 62 among four cost-sharing options, a free-care option, and an HMO option. The options are shown in Table 7.

Table 7. RAND Health Insurance Experiment Options

Copayment	Deductible
Free care (fee-for-service)	None
Free care (HMO)	None
25 percent	None
50 percent	None
95 percent	None
95 percent for outpatient care, free inpatient care	$150 individual, $450 family

[31] Newhouse, Joseph P., et al. *Free for All? Lessons from the RAND Health Insurance Experiment.* Cambridge: Harvard University Press, 1993.

Study participation time varied between three and five years. About 60 percent of the participants were given a physical examination at enrollment while 100 percent were given an examination when they left the program. In addition, each participant filled out a biweekly health report. The health conditions that were monitored include:

- Chronic obstructive airway disease
- Congestive heart failure
- Hay fever
- Angina pectoris/ischemic disease
- Varicose veins
- Hypertension
- Hypercholesterolemia
- Joint disorders
- Peptic ulcer disease
- Vision
- Hearing
- Diabetes mellitus
- Thyroid
- Anemia
- Urinary tract infection
- Acne

Not all participants were given an initial screening examination for fear it might uncover some previously undetected illnesses that would lead to increased utilization of health care. Participants not given the initial screening examination were used as a control group.

As expected, those with access to free care (fee-for-service) had more visits and admissions than those with copayments. Those using the HMO free-care option had more visits, but fewer admissions. The RAND study evaluated each individual's health according to five broad categories—general health (physical, mental, and social), physiological health (chronic diseases and their effects), health habits, disability days, and risk of dying. Because RAND could not find any health-related differences among the cost-sharing options, they combined them and compared them to the free plans. The major conclusions from the study were:

- cost sharing did not affect the average participant in any of the five general health assessments administered,
- cost sharing had no effect on major deleterious health habits such as smoking, weight, or cholesterol levels, and
- people with some specific conditions benefited from free care.[32]

The above conclusions imply that the lower utilization rates experienced by beneficiaries with cost-sharing requirements reflect the elimination of largely unnecessary visits and treatment.

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[32] The only statistically significant positive effect of free care for the otherwise "average" person was for far vision. The corrected vision for those in the free plan was 20/22 versus 20/22.5 in the cost-sharing plans. Although the finding was statistically significant, the difference was minor in practical terms. A marginally significant effect was found for diastolic blood pressure but, again, the practical difference was minor.

Because the RAND Health Insurance Experiment excluded Medicare-eligible beneficiaries, and because those beneficiaries constitute a substantial percentage (25 percent) of the USFHP enrollee population, we need another source of information on how the health of Medicare eligibles is affected by enrollment in an HMO compared to fee-for-service plans. A recent study, performed by the Virginia Commonwealth University (VCU) and others, used a telephone survey to measure the response to treatment of 6,476 Medicare HMO enrollees and 6,381 fee-for-service beneficiaries who reported joint or chest pain during the previous 12 months.[33] Because the participants were not observed under experimental conditions, the study statistically controlled for the effects on health outcomes of demographic factors, health and functional status, and health behavior characteristics. The study found no difference between HMOs and fee-for-service plans with respect to complete elimination of symptoms, but HMO enrollees with continued joint pain reported less symptomatic improvement than non-enrollees.

Unless enrollees in the USFHP use health care services much differently than the general beneficiary population, it is probably reasonable to generalize the results of the RAND experiment and the VCU study to conclude that the health of enrollees would not suffer if their coverage were transferred to TRICARE Standard or Medicare.

J. SATISFACTION WITH CARE

The basis for determining USFHP enrollee satisfaction with care at USTFs is a recent telephone survey performed by Vector Research, Incorporated for OASD (HA/HSF). Because only five of the ten USTFs were sampled, we will not display the survey results by individual USTF, but rather as a group. The survey asked for enrollee satisfaction with a number of specific aspects of care, as well as for overall satisfaction with care. An important drawback of this survey, however, is that it did not ask for corresponding pre-enrollment satisfaction with MTFs and CHAMPUS. Those results would have provided useful benchmarks for comparison with the satisfaction levels experienced at USTFs.

To try to obtain some benchmarks for comparison, we selected similar questions regarding satisfaction with MTFs and CHAMPUS from the 1992 DoD Survey of Military Medical Care Beneficiaries, more commonly referred to as the "Section 733 Survey."[34] It

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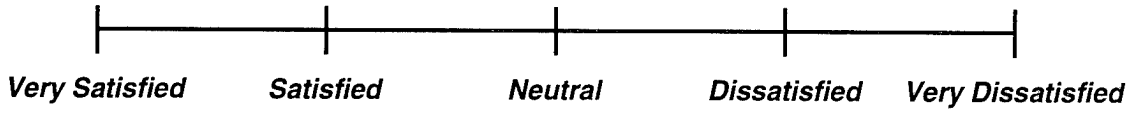
33 Clement, Dolores G., et al. "Access and Outcomes of Elderly Patients Enrolled in Managed Care," *Journal of the American Medical Association*, Vol. 271, No. 19, pp. 1487-1492, May 18, 1994.

34 This survey was mandated by Section 733 of the National Defense Authorization Act for FY 1992 and 1993. The survey design and analysis are described in "Analysis of the 1992 DoD Survey of Military Medical Care Beneficiaries," cited previously.

must be noted, however, that this survey pertained to a different group of beneficiaries and, as such, cannot be used to directly compare the satisfaction of USFHP enrollees with that of beneficiaries using MTFs and CHAMPUS. It does serve, however, to put the USFHP satisfaction results in perspective.

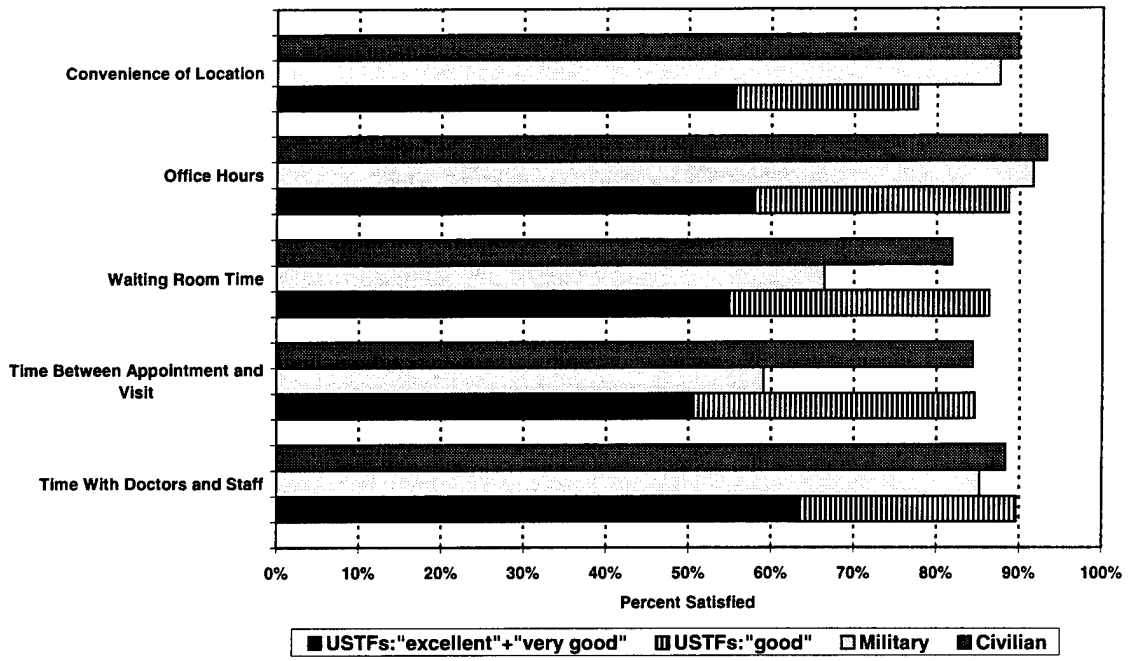
An important obstacle to comparing the results of the USTF and Section 733 surveys is that satisfaction is recorded on different scales. The Section 733 Survey asked respondents to rate satisfaction with care on the following scale:



whereas the USTF Survey used the following scale:

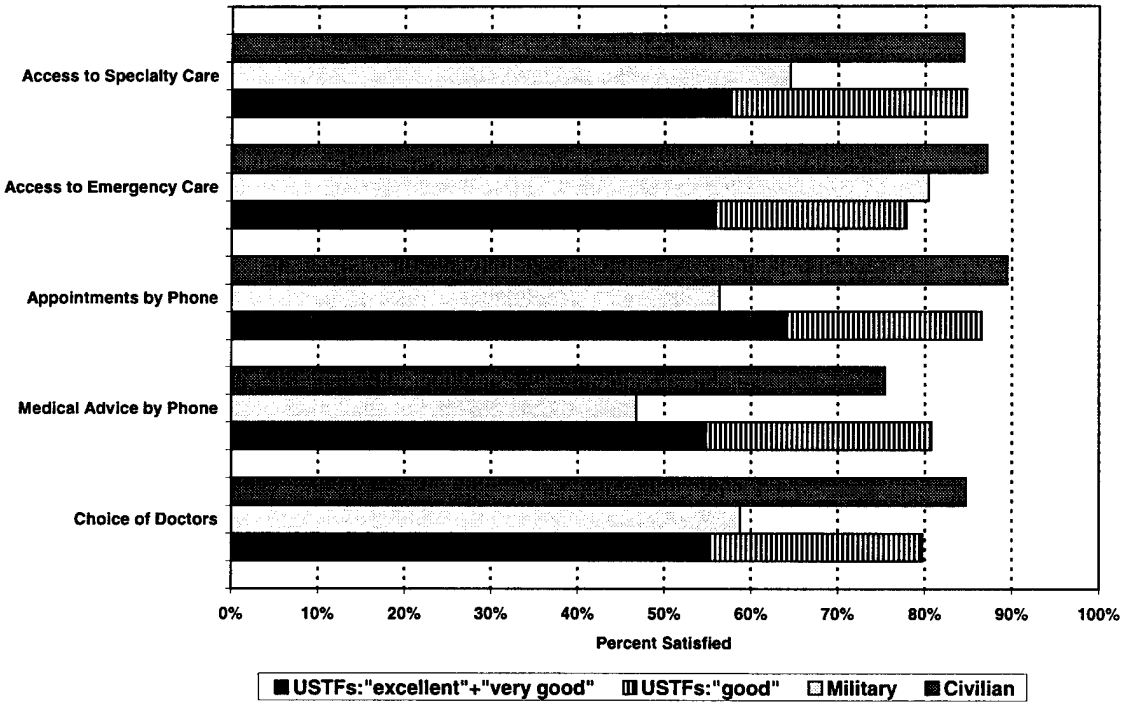
The two scales are not directly comparable, particularly because there is no neutral value on the USTF scale ("good" cannot be considered a neutral evaluation). We must therefore use caution when interpreting the survey comparisons. In the subsequent analyses, we define satisfaction with MTFs and CHAMPUS by the responses "satisfied" or "very satisfied." Satisfaction with USTFs is defined two ways—by the responses "good," "very good," or "excellent," and alternately as "very good" or "excellent." Using two measures of USTF satisfaction should provide lower and upper bounds on the level of satisfaction with USTFs. Both measures will be displayed in the graphs to follow but, for ease of exposition, the discussion of USTF satisfaction will be based only on the upper bound ("good," "very good," or "excellent).

Figures 4 through 6 compare the results of the USTF and Section 733 surveys. To facilitate the display, the responses are grouped into three broad categories—time-related issues, access-related issues, and care-related issues. With respect to time and access-related issues, satisfaction with USTFs is roughly equivalent to the levels experienced by beneficiaries who use civilian facilities, and is generally greater than the levels experienced by beneficiaries who use MTFs. Satisfaction with care-related issues is very high for all three types of facilities.



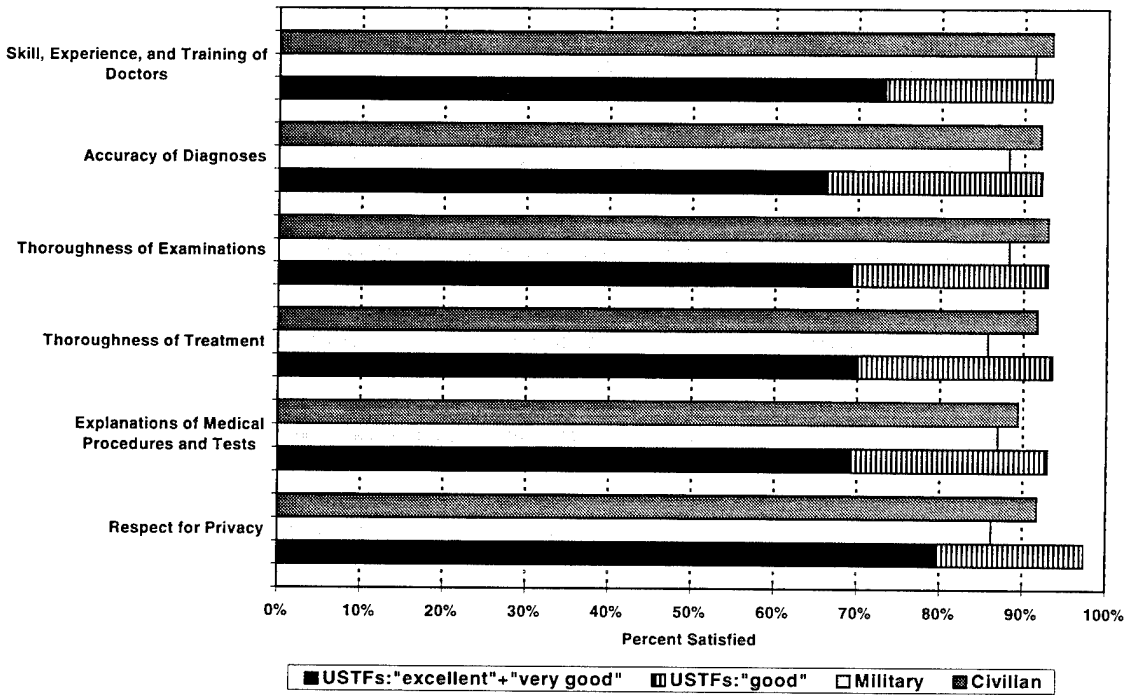
Source: USTF figures derived from OASD (HA/HSF) survey of USTF enrollees; MTF and CHAMPUS figures derived from Section 733 Survey of general beneficiary population.

Figure 4. Satisfaction With Time-Related Issues



Source: USTF figures derived from OASD (HA/HSF) survey of USTF enrollees; MTF and CHAMPUS figures derived from Section 733 Survey of general beneficiary population.

Figure 5. Satisfaction With Access-Related Issues



Source: USTF figures derived from OASD (HA/HSF) survey of USTF enrollees; MTF and CHAMPUS figures derived from Section 733 Survey of general beneficiary population.

Figure 6. Satisfaction With Care-Related Issues

The USTF survey also asked a question about overall satisfaction with care. Because the Section 733 Survey did not have a comparable question regarding satisfaction with MTFs and CHAMPUS (it asked respondents to rate inpatient and outpatient care separately), we used the HB&P survey instead. An additional benefit from using the HB&P survey to compare satisfaction levels among the three types of facilities is that the comparison can be made for a common set of beneficiaries (i.e., the 641 enrollee matches cited previously in this report). We can also compare enrollee satisfaction at USTFs with the satisfaction of other beneficiaries living in the same USTF regions, for whom access to MHSS services is presumably the same. The results are shown in Table 8.

Table 8. Overall Satisfaction With Care

Facility	USFHP Enrollees	USTF Regions
USTF	93%	–
MTF	73%	83%
CHAMPUS	78%	87%

Satisfaction with care at USTFs is clearly higher than at MTFs and under CHAMPUS, although USFHP enrollees appear to be less satisfied with MTFs and CHAMPUS than other beneficiaries in USTF regions. However, it is impossible to sort out the effect of nearly free care at USTFs on beneficiary satisfaction. Moreover, if the "good" category were excluded from the measure of satisfaction with USTFs, overall satisfaction with USTFs would drop to 75 percent. Therefore, a level of satisfaction on a scale more comparable to that used by the HB&P survey most likely lies between 75 and 93 percent.

K. CONCLUSIONS

The major conclusions from our evaluation are as follows:

- The USFHP, as currently structured, is more costly to the government than is TRICARE Standard and Medicare for the same population of enrollees. This is true for every USTF. Reasons for the difference are the high incidence of private insurance coverage among USFHP enrollees and the greater utilization of USTF services due to reduced beneficiary cost sharing.
- There is no evidence that the health of beneficiaries would be adversely affected by a transfer of coverage from the USFHP to TRICARE Standard and Medicare.
- Overall satisfaction among current USFHP enrollees may suffer to the extent that coverage is transferred to TRICARE Standard, but the evidence for this is weak.

ABBREVIATIONS

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AFB	Air Force Base
AMC	Army Medical Center
CHAMPUS	Civilian Health and Medical Program of the Uniformed Services
CONUS	continental United States
CY	calendar year
DEERS	Defense Enrollment and Eligibility Reporting System
DoD	Department of Defense
DRG	Diagnosis Related Group
FEHBP	Federal Employees Health Benefits Program
FY	fiscal year
GAO	General Accounting Office
HA	Health Affairs
HB&P	Health Budgets and Plans
HMO	Health Maintenance Organization
HSF	Health Services Financing
IDA	Institute for Defense Analyses
MEPRS	Medical Expense and Performance Reporting System
MIPR	Military Interdepartmental Purchase Request
MHSS	Military Health Services System
MTF	Military Treatment Facility
NH	Naval Hospital
NNMC	National Naval Medical Center
OASD	Office of the Assistant Secretary of Defense
OCHAMPUS	Office of the Civilian Health and Medical Program of the Uniformed Services
OCONUS	outside the continental United States
PHS	Public Health Service
RWP	Relative Weighted Product
USFHP	Uniformed Services Family Health Plan
USTF	Uniformed Services Treatment Facility
VCU	Virginia Commonwealth University

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13. ABSTRACT ***(Maximum 200 words)***

The Congress, through enactment of the National Defense Authorization Act for Fiscal Year 1994, Section 718, directed the DoD to use an FFRDC to evaluate the performance of Uniformed Services Treatment Facilities operating under a managed-care plan. This report summarizes the results of the evaluation and the methods used to obtain them. The evaluation includes a comparison of the cost of the managed-care plan with an estimate of what the cost would have been had other sources of government health care been used. It also assesses the impact of the managed-care plan on the access of covered beneficiaries to health care and on the quality of health care received by covered beneficiaries.

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